

Message

From: Kwan, Roxanne S [roxanne.kwan@doh.hawaii.gov]
Sent: 7/28/2021 5:24:02 AM
To: dayna.k.fujimoto.civ@us.navy.mil
CC: Myers, Hugh [hugh.myers@doh.hawaii.gov]; Shende, Anay [anay.shende@doh.hawaii.gov]; Takaba, Richard R [richard.takaba@doh.hawaii.gov]; Grange, Gabrielle Fenix [gabrielle.grange@doh.hawaii.gov]; Ichinotsubo, Lene K [lene.ichinotsubo@doh.hawaii.gov]; Whittier, Robert [Robert.Whittier@doh.hawaii.gov]; Tu, Lyndsey [Tu.Lyndsey@epa.gov]; Lohr, Susan C CIV USN NAVFAC HAWAII PEARL (USA) [susan.c.lohr.civ@us.navy.mil]; Carvalho, Gabriela [Carvalho.gabriela@epa.gov]; Rossi, Caroline E CIV NAVFAC HI, EV14 [caroline.rossi@navy.mil]; Johnson, Jeff [JEFF.JOHNSON@aecom.com]; Uchima, Darren Y CIV USN NAVFAC HAWAII PEARL (USA) [darren.y.uchima.civ@us.navy.mil]; Kishaba, Raelynn I CIV USN NAVFAC HAWAII PEARL (USA) [raelynn.i.kishaba.civ@us.navy.mil]
Subject: FW: Red Hill Fuel Product Gauging - Navy Recommendations
Importance: High

Hi Dayna,

I am following up on your email regarding the Navy's two recommendations for the fuel product gauging program for the in-tunnel wells.

For Recommendation #1 **option 2** (resume high frequency water level measurements, and drop frequency of product gauging to quarterly), we concur with the Navy's recommendation. However, should the SVM detect significant spikes in vapor concentrations indicative of a new release, product gauging would become a higher priority than maintaining the water level measurements.

For Recommendation #2, we **concur with switching product gauging to RHMW1R** as it is the appropriate well screening to allow detection of product at the water table.

Should you have any questions, feel free to contact me.

Roxanne

From: Fujimoto, Dayna K CIV USN NAVFAC HAWAII PEARL (USA) <dayna.k.fujimoto.civ@us.navy.mil>
Sent: Thursday, July 22, 2021 5:49 PM
To: Kwan, Roxanne S <roxanne.kwan@doh.hawaii.gov>
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Subject: [EXTERNAL] Red Hill Fuel Product Gauging - Navy Recommendations

Hi Roxanne,

The Navy has two recommendations presented below regarding our fuel product gauging program for the in-tunnel wells and seeks DOH approval or feedback on these recommended changes. These two items were discussed with Fenix Grange (DOH HEER) and Lindsey Tu (EPA) during a Red Hill check-in call on 7/21/21, and they suggested we consult with you.

RECOMMENDATION #1:

Navy recommends proceeding with option 2 below.

Due to interferences between monitoring instruments, monitoring within the in-tunnel wells can continue following one of two options:

- Opt 1: Monthly fuel product gauging without high-frequency water level measurements
- Opt 2: Quarterly fuel product gauging with high-frequency water level measurements

Background #1:

- Since Jul 2017, USGS has been conducting water level monitoring in the Red Hill monitoring well network. The USGS started monitoring water levels in Jul 2017 and conducted a synoptic water level study that included non-pumping and controlled pumping conditions of local water supply wells from Jul 2017 through Feb 2018 to gain a better understanding of groundwater flow conditions and the effect of pumping on water levels.
- Fuel product gauging in RHMW01, RHMW02, RHMW03, and RHMW05 was conducted monthly until Jul 2017 when the synoptic water level study began. Monthly fuel product gauging resumed in Mar 2018 while continuing high-frequency water level measurements. In Aug 2018, the fuel product gauging frequency was revised from monthly to quarterly after it was discovered that USGS installed transducers were being disturbed as fuel gauging activities were conducted.
- Due to the sensitivity of the transducers USGS uses to take high-frequency water level measurements and the need to collect very accurate water level data at the site, conducting fuel product gauging while transducers are installed can potentially affect the accuracy of the water level data if transducers are disturbed. Deployment of other sampling equipment into the well to conduct fuel product gauging and groundwater sampling while the USGS transducers are deployed within the MWs has the potential to disturb transducers and affect the accuracy of the water level data. From Aug 2018 to Mar 2021, USGS would remove and reinstall their transducers to allow groundwater sampling to occur for the quarterly LTM events. Removal of the transducers for the quarterly LTM events allowed the Navy to conduct fuel product gauging on a quarterly frequency.
- Following the 2021 2nd quarter LTM event, USGS did not redeploy their transducers due to funding issues. This allowed the Navy to increase the regular fuel product gauging frequency to monthly, which we have been doing since Apr 2021 (reference email from Sherri on 6/21/2021). This also allowed the Navy to conduct increased sampling in the MWs under the Notice of Interest and Transition Plan following the May 6 incident in the tunnel.
- Both the higher frequency (monthly) fuel product gauging and high-frequency water level measurements have their benefits.
 - Monthly fuel product gauging supports continued LNAPL monitoring following the May 6 incident. No fuel product or sheen have been observed.
 - High-frequency water level measurements support the evaluation of groundwater flow conditions, upcoming in-well groundwater flow and velocity tests, and further GWFM efforts.
- Note: High-frequency water level measurements cannot begin until after the Transition Plan sampling is completed, currently 8/20/2021.

RECOMMENDATION #2:

The Navy recommends starting fuel product gauging at RHMW01R and stopping fuel product gauging at RHMW01.

Background #2:

- RHMW01R was installed earlier this year to replace RHMW01, which has a completely submerged well screen.
- Based on your Transition Plan email dated 7/2/2021 stating, "The Navy may choose to discontinue fuel product gauging at RHMW01 as it has a submerged screen and has an obstruction for a bailer collector. RHMW1R can be monitored for NAPL movement in the same area," we are hopeful that DOH is amenable to allowing the switch in monitoring RHMW01R instead of RHMW01 for LNAPL.
- During the Red Hill Check-in call with Fenix and Lindsey on 7/21/2021, we brought this question up and received a positive response.

Please let me know if DOH agrees with Navy's recommendations, has any comments or questions, or would like to discuss.

Vr,

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